SUTTON (W.L.)

# REPORT ON THE EPIDEMICS

OF

# TENNESSEE AND KENTUCKY.

BY

W. L. SUTTON, M.D.,

OF GEORGETOWN, KY.

PRESENTED TO THE AMERICAN MEDICAL ASSOCIATION,

AT ITS SESSION OF MAY, 1852.

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The Committee appointed "to investigate and report on the epidemic diseases of Tennessee and Kentucky," would respectfully report, that, so soon as they were aware of the action of the Association, they applied to two members of that Committee of the Association, which assigned the subjects to the different committees, to ascertain the particular duties expected of them; but, having received no very definite answer, they determined to confine themselves to such epidemics as should have occurred during the year 1851. They accordingly issued a circular to the physicians of Tennessee and Kentucky to that effect, a copy of which is hereto annexed.

The table attached to the circular was formed in the hope that if any extensive epidemics should occur, and physicians should take the trouble to tabulate their cases, something might be done to show the ages, sexes, and races most liable to particular diseases.

We have abundant cause for thankfulness to Almighty God that, from the inexhaustible stores of his mercies, he has vouchsafed to both Tennessee and Kentucky an extraordinary exemption from epidemic diseases during the period embraced in this report.

As, however, it could not be expected that so great an extent of country should altogether escape epidemic influences, your Committee will proceed to present such notes of a few epidemics as the kindness of physicians residing in the communities where they prevailed have enabled them to make.

Preliminary to an account of the epidemics, it is deemed advisable to say something of the state of the weather during the year 1851; and also of the topography of such places as will be represented in this report. Here your Committee may be allowed to regret that they have not been able to procure a single meteorological table,

constructed in either State. They have, however, constructed an approximative tabular view of the weather, as reported from Memphis, Tenn., remarking that, from the communication from Dr. Shanks of that city, they presume the report, as to rain, is entirely reliable, whilst that portion relating to temperature, especially during the first part of the year, is to be considered only approximate. They have also been kindly furnished with abstracts from two tables kept in Cincinnati, which, being immediately on the confines of Kentucky, they present herewith.

They will also make a few general remarks as to the state of the weather, which will be understood to apply principally to the vicinity of Georgetown, Ky.

The latter part of the winter was comparatively mild. In March, there was an absence of the blustering, windy weather which usually characterizes that month. During the month of April, we had very little rain, not more perhaps than four or five light showers. The dry weather continued throughout May, so much so that many farmers found it difficult to get suitable time to sow their hempseed. The long wet season, so important to tobacco planters, was entirely absent. June and July were comparatively hot and dry. The first three weeks in August were rainy. About the 20th, the rain ceased, and dry, hot weather set in. The watercourses failed remarkably fast, and about the middle of September the water-mills ceased to grind, and did not resume until after Christmas. There was no equinoctial storm in March or September. It is doubtful, however, whether there is any particular liability to storms at or about the equinoxes.

At Covington, the spring is reported to have been wet, and the summer hot and dry; the Ohio and Licking Rivers to have become very nearly as low as they were ever known.

In Boone, June is reported to have been very wet. From June till late in December, exceedingly dry.

During the whole year, the barometer rarely rose as high as 30 in., or sank much lower than 29. June and July were usually warm, as were the last week in August, and the first two in September, the thermometer frequently rising as high as 85° to 94°.

How much influence in the maintenance of health was exerted by the state of the weather detailed above, your Committee are not prepared to say. It seems altogether probable that it had considerable influence. One other fact may be worthy of notice. We have had very little sickness since the prevalence of cholera in 1849.

After the cholera of 1832–3, we had a similar exemption from general disease. This has been ascribed to the fact that to very many persons of debilitated and ruined constitutions—persons most liable to sickness—cholera proved fatal, leaving a population of better constitutions, more able to resist disease. Although there is much of plausibility and of truth in this hypothesis, yet it is believed that the cause is inadequate to the effect. During epidemics, the force of the disease is not exhausted upon the delicate, the debilitated, and the ruined constitutions. On the contrary, the robust, the healthy, the vigorous come in for a full share of suffering and death. In addition to this consideration, the subsidence of cholera sometimes leaves other diseases raging in full force; of which Memphis and Covington were examples in 1851. Hence it seems by no means improbable that there is a state or condition—"a constitution of the atmosphere"—independent of all sensible properties, which greatly influences the appearance or non-appearance of disease. We know that it may rain when the barometer stands at 30 inches, and it may be clear when it stands at 29. The heat may be oppressive when the thermometer is at 80°, or the heat may be very tolerable when it is at 90°. Why may there not be a condition of the air which shall greatly moderate or greatly aggravate the existing causes of disease? In fact, there is much reason to think that such is the case. Occasionally, we see a contagious disease show itself under circumstances which seem very favourable to its extension, yet it will scarcely, or not at all, spread; whilst, at other times, when the circumstances favouring its extension scarcely exist, it will spread far and wide. A winter and spring occurred, about ten years ago, which seemed peculiarly favourable for the production of pleurisy, pneumonia, and rheumatism, in which scarcely a case of either was seen. This state of the atmosphere favourable to the rise and spread of disease, though inappreciable to the senses of man, yet seems occasionally to become very perceptible to the senses of the lower animals. Divers instances of birds leaving their haunts just before the outbreak of an epidemic have been observed. This was said to have occurred at different points during the prevalence of cholera in 1832–3. One case is within the personal observation of one of your Committee. Early in the month of July, 1833, the swallows were observed to collect in great numbers about the court-house in Morganfield, Ky. (in the cupola of which many of them built their nests), with constant chattering. A gentleman, observing the circumstance, remarked that they were behaving very much like they usually do in the fall, before their migration. After that day, no swallow was

seen in the neighbourhood during the summer. The cholera appeared in about a week afterwards.

This state would seem not to be a simple quality of the air, like its weight, moisture, or temperature; but a combination of different elements united in various proportions; so that it favours, at one time, the spread of smallpox, at another that of the cholera, &c. It is probably even more discriminating (if we may use such an expression) than this. In the opinion of your Committee, the remote cause of epidemic cholera, cholera infantum, diarrhœa, dysentery, intermittent, remittent, and *very probably* of typhoid fever, is essentially the same, whether you call that cause *malaria*, *cryptogamous plants and fungi*, *undue moisture*, or what not. This "constitution of the air," modified to a greater or less degree by the intensity of exciting causes, and even by the state of the system of individuals, may, and probably does determine whether cholera, dysentery, diarrhœa, or fever shall prevail in a particular location at a given time.

Upon this point, Dr. Withers, speaking of the outbreak at Brandenburg, says: "We had had like diarrhœa and looseness of the bowels before; the same number of inhabitants, pursuing the same avocations in life, drinking the same water, exposed to the same cellars and filth, experienced the same atmospheric changes before and since, acted under the same mental, moral, and religious influences, but were never visited before by so dire an epidemic. Yet, taking all things into consideration, and the manner in which it so fatally played around the one locality, we are constrained to the opinion that the exciting cause of the disease was in the filth of the hollow, combined with the peculiar choleraic condition of the atmosphere and constitution."

As the limits to which this paper must necessarily be confined forbid further amplification, your Committee will dismiss the subject with two remarks: 1. Although the idea of such a constitution of the air has been occasionally referred to ever since the days of Sydenham, it has exerted no influence on the profession. 2. Although there is at present little probability that we shall ever have any means of indicating this property of the air and profiting by the discovery, yet that probability is not much less than that of inventing the electric telegraph was thirty years ago. Therefore, *nil desperandum.*

Topography.—A portion of Kentucky, extending from Danville to the Ohio River, and from about Maysville to Louisville, with occasional exceptions, has for its surface rock, the blue limestone of

the carboniferous system, composed of 80 or 90 per cent. of carbonate of lime, with the residue of carbonate of magnesia, of alumina, and silica in various proportions. This rock is semi-crystallized, and extremely rich in fossil remains. It is covered to a greater or less depth by a bed of clay usually having salts of iron in combination. This clay again is covered by a layer of vegetable mould, constituting a soil of unrivalled fertility, in which the blue grass [*poa pratensis?*] grows to the greatest perfection. The water used for drinking and cooking throughout this region is usually "limestone water," containing, generally, bicarbonates of lime and magnesia in solution. The temperature of three springs in Scott County, taken by immersing the thermometer in the spring, was 55° in two, and 56° in the third. The observation was made on July 15, the weather being both dry and hot. In the summer, most springs of the region have a higher temperature—in the winter, a lower.

The geological formation above noticed embraces the counties of Kenton, Boone, Woodford, Scott, Oldham, Bourbon, Lincoln, Madison, which are noticed in this report.

The city of Covington, Kenton County, is situated at and below the mouth of the Licking River. It is bounded on the east by Licking River, on the north by the Ohio, west and south-west by a semicircle of high hills. A large portion of the city is built upon very rolling ground. A great number of streets have recently been graded and paved. Consequently, many receptacles have been made, which, in wet weather, become more or less filled with water; and in hot dry weather are left nearly or quite uncovered. The Licking and the Ohio Rivers are bordered by a tolerably high bank, which is not overflowed. But the town of New Port, which is on the opposite side of the Licking, is sometimes overflowed. Along the high bank above mentioned, and between it and the water's edge, at low water, there is a broad strip covered with slimy dark mud, which becomes quite hard and dry by exposure to the summer's heat. Along the base of the hills to the west and south-west of the city, through a bottom varying from one hundred to four hundred yards in width, runs Willow Run into the Ohio River. When the Ohio is high, water is backed up this stream and overflows the bottom, sometimes to the depth of two or three feet. Of course this leaves a deposit. A little to the west of the centre of the city, begins a piece of low ground, which stretches westwardly and north-westwardly nearly to Willow Run and quite to the Ohio. The soil here is black and sandy, and in wet weather is covered with water. In this division of the city are many springs of excellent limestone water. A few good wells are

found in other portions of the city. Most persons, however, use cistern water for all purposes. Some of the poorer classes use river water exclusively.

Boone County, Kentucky, is situated west of Kenton, and extends farther north than any county in the State. The face of the country is rolling and uneven, being about two hundred and fifty to three hundred feet above the Ohio River. It is traversed by numerous small streams, which run, in different directions, into the Ohio, which bounds the county on the north and west. The soil of the county is a vegetable mould lying upon a bed of red clay. Along the river, there is much sand and some carbonate of lime beneath the vegetable mould. The streams have a great fall to the river, and of course, when swelled by heavy rains, have great body and impetuosity, cutting out little basins at numerous points, which serve to hold water for a time, and to receive vegetable matter in deposit, to be acted on in the dry and hot seasons. Very many dwellings are situated upon narrow strips of fertile land, close to these streams. Springs are plenty, and water can readily be found by digging twenty or thirty feet, and without encountering stone. All the water is of limestone. This description will also apply to Oldham County.

The vicinity of Midway, Woodford County, is agreeably undulating, supplied with many springs and running streams, so well supplied indeed with the latter that few artificial pools have been formed for watering stock. The soil is extremely rich and covered with luxuriant vegetation. In Midway, is an Artesian well some sixty feet deep, which supplies sulphur water; otherwise, the water is limestone. This will apply to Scott, Bourbon, Madison, and Lincoln, except that in those counties there are many artificial pools.

Your Committee would bespeak an especial attention to the following description of Brandenburg and its vicinity from the pen of Dr. J. V. Withers, of that place: "Our town is situated on the Ohio River about forty miles below Louisville. The number of our inhabitants by the last census was 609, one-fourth of whom are negroes. The town is situated on two hills, pointing within thirty yards of the river, divided by a hollow thirty yards wide, running back three hundred, and alluvial. The hills are elevated some two hundred or three hundred feet above low water mark. The town is supplied by springs and wells rich in carbonate of lime. All the business houses are situated in the hollow, with a number of families living on and above the basement stories. There are a number of cellars which have been filled with water since last January, and a

majority of the houses have under and around them a compound of mud and filth—the washings of the hills, kitchens, and privies standing from six to ten inches deep. The hills are composed of limestone and red clay, and the inhabitants are supplied by cisterns. There are numerous stagnant pools on the hills. The country around the town and back makes off into barrens,* diversified by valleys and hills, based on limestone. There are many ponds. The county is supplied promiscuously with cisterns and limestone springs.

Hickman (Fulton County, Ky.) and its vicinity are located on the Mississippi River, about forty miles below the mouth of the Ohio. The business portion of the town of Hickman is built at the base of a high hill, upon which hill the citizens principally reside. The town contains 600 inhabitants, and is a place of considerable trade, being the shipping-point for a considerable portion of Kentucky and Tennessee. The vicinity of Hickman, bordering on the river, is marshy and subject to inundation, being composed of alluvial deposit. Farther back the land is higher, intersected by numerous streams and ravines, which are filled with water when the river is high, and mostly become dry in summer, being covered to a greater or less extent by the earth that is deposited by the backwater, and mixed with vegetable matter.

The dwellings of those in easy circumstances usually consist of what are called double cabins, being composed of two rooms contiguous, with a large hall between them, open at each end—the whole covered together. The majority, however, live in single rooms. These are usually situated in small clearings, and bounded on one side by a cornfield, and on the other by the forest, and usually have two doors.

The drinking water is freestone, obtained sometimes from springs, generally from wells; it is usually of indifferent quality.

The great portion of the county is in a state of nature, covered with a heavy growth of oak, beech, hickory, &c., with much undergrowth.

The city of Memphis, Tenn., contained, according to the census of 1850, 6369 whites, 2471 blacks—total, 8840. The suburbs afford a population of probably 3000 more, who are included in the mortality table, making an aggregate of nearly 12,000. The city is built upon a high bank, and in front of much the larger portion is

* This word is used to denote wild lands covered with grass and bushes, sometimes a few small trees.

a large *batture* formed by the deposit from the river. Much of this is overflowed at high water. Bayou Gayoso passes through the suburbs about half a mile from the river, running in the opposite direction, and empties into Wolf River near its mouth, at the upper limits of the city. When the Mississippi River is high, the backwater extends up Wolf River and along the bayou, so as to reach nearly to the southern portion of the city. The bayou, being thus swelled out, covers the adjacent flat lands, and forms with Wolf River an extensive and safe harbour for timber for all the saw-mills and extensive brickyards situated adjacent thereto, as well as for wood for city fuel. The Mississippi River continued high last summer, until near the middle of August; and this extensive surface of backwater was almost covered with rafts of timber for these various purposes. All this vegetable matter was exposed to the intense heat of the sun whilst the river was high; and upon its subsiding, a still greater surface of earth, covered by decaying vegetable matter and the green scum generated by the stagnant water and solar heat, was exposed to the same intense heat. The *batture* in front of the city, over which the flat-boats lay during the spring business season, and upon which all the unsound and refuse vegetable and animal matters were thrown, remained unwashed and unpurified for want of the usual rains, presenting its cracked and exhaling surface during all the summer.

Knoxville, Tenn., is situated upon secondary formation. Temperature of springs about 58°. Quality of water not stated.

*Abstract of Meteorological Observations for A. D.* 1851, *taken at Woodward High School, Cincinnati—lat.* 39° 6′ *N., long.* 84° 22′—*at an elevation of* 150 *feet above low water in the Ohio River.* By JOSEPH RAY, M. D., &c.

| | FAHRENHEIT'S THERMOMETER. | | | | | | | | | | | | BAROMETER. | | | | RAIN AND SNOW. | | | WEATHER. | | | WINDS. | | | | | | | | Least daily variation of thermometer. | Greatest daily variation of thermometer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Minimum. | Maximum. | Range. | Mean temperature. | Mean temperature at sunrise. | Mean temperature 2 P. M. | Coldest day. | Mean temp. coldest day. | Warmest day. | Mean temp. warmest day. | Day of minimum. | Day of maximum. | Minimum. | Maximum. | Range. | Mean height. | Fluid inches of rain and snow. | Depth of unmelted snow. | No. of days of rain and snow. | Clear and fair days. | Variable days. | Cloudy days. | N. | N. E. | E. | S. E. | S. | S. W. | W. | N. W. | | |
| | | | | | | | | | | | | | inches | inches | inches | inches | in. hund. | | | | | | | | | | | | | | | |
| January | 0° | 66° | 66° | 36.06° | 29.30° | 45.40° | 30th | 7.7° | 15th | 53.2° | 31st | 16th | 28.790 | 30.112 | 1.322 | 29.3538 | 45 | 0 | 3 | 15 | 12 | 4 | 0 | 2 | 0 | 0 | 1 | 9 | 14 1/2 | 4 1/2 | 8° | 47° |
| February | 18 | 70 | 52 | 42.44 | 36.89 | 49.93 | 28th | 29.0 | 26th | 60.3 | 17th | 26th | 28.800 | 29.912 | 1.112 | 29.4100 | 6 45 | 4.5 | 11 | 8 | 15 | 5 | 0 | 3 | 3 | 1 1/2 | 4 1/2 | 4 | 8 1/2 | 3 1/2 | 2 | 31 |
| March | 20 | 79 | 59 | 46.42 | 37.29 | 57.29 | 3d | 32.7 | 30th | 67.2 | 1st, 3d | 30th | 28.936 | 29.601 | 0.665 | 29.3313 | 3 36 | .75 | 10 | 16 | 10 | 5 | 1 1/2 | 3 1/2 | 1/2 | 0 | 0 | 9 | 10 | 6 1/2 | 4 | 37 |
| April | 31 | 78 | 47 | 52.00 | 43.20 | 63.80 | 21st | 41.3 | 1st | 63.5 | 15th | 25th | 28.652 | 29.774 | 1.122 | 29.2452 | 1 70 | | 8 | 10 | 16 | 4 | 4 | 7 1/2 | 0 | 0 | 2 | 3 | 7 | 6 1/2 | 7 | 36 |
| May | 27 | 92 | 65 | 65.84 | 56.52 | 77.42 | 1st | 38.8 | 11th | 78.0 | 2d | 12th | 28.956 | 29.593 | 0.637 | 29.2873 | 3 90 | | 9 | 19 | 9 | 3 | 3 | 6 | 1/2 | 0 | 0 | 2 | 15 | 4 1/2 | 10 | 36 |
| June | 54 | 95 | 41 | 71.34 | 63.20 | 82.77 | 9th | 63.0 | 28th | 81.0 | 9th, 10th | 28th | 28.775 | 29.602 | 0.827 | 29.2431 | 2 28 | | 13 | 11 | 19 | 0 | 1 | 5 | 2 | 0 | 1 | 7 1/2 | 7 | 6 1/2 | 10 | 29 |
| July | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| August | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| September | 42 | 98 | 56 | 69.44 | 58.90 | 82.8 | 28th | 47.2 | 12th | 82.7 | 25th | 12th, 13th | 29.009 | 29.711 | 0.702 | 29.3755 | 0 43 | | 4 | 22 | 6 | 2 | 2 | 12 | 3 | 0 | 0 | 0 | 3 | 10 | 4 | 33 |
| October | 24 | 84 | 60 | 53.05 | 44.94 | 65.48 | 26th | 35.2 | 11th | 66.8 | 27th | 9th | 28.857 | 29.714 | 0.857 | 29.2616 | 1 82 | | 5 | 16 | 11 | 4 | 0 | 0 | 2 | 0 | 2 | 6 1/2 | 12 1/2 | 8 | 7 | 38 |
| November | 24 | 74 | 50 | 40.94 | 36.20 | 47.80 | 28th | 32.0 | 1st | 62.0 | 7th | 1st | 28.798 | 29.727 | 0.929 | 29.2739 | 2 30 | 3.0 | 11 | 9 | 8 | 13 | 1 1/2 | 3 | 5 1/2 | 0 | 1 1/2 | 3 1/2 | 8 1/2 | 6 1/2 | 6 | 30 |
| December | —4 | 62 | 66 | 30.34 | 25.35 | 37.64 | 16th | 2.8 | 29th | 54.7 | 16th | 29th | 28.910 | 29.794 | 0.884 | 29.3941 | 3 21 | 3.0 | 12 | 6 | 10 | 15 | 0 | 6 | 2 | 0 | 2 1/2 | 4 | 16 | 1/2 | 3 | 33 |

The annual amount of rain from 1840 to 1851 inclusive:—

| | | | |
|---|---|---|---|
| In 1840 there were | 51.28 inches. | In 1846 there were | 51.00 inches. |
| " 1841 " " | 39.43 " | " 1847 " " | 61.56 " |
| " 1842 " " | 43.20 " | " 1848 " " | 53.37 " |
| " 1843 " " | 51.00 " | " 1849 " " | 53.21 " |
| " 1844 " " | 42.70 " | " 1850 " " | 53.49 " |
| " 1845 " " | 46.21 " | " 1851 " " | 31.90 " |

| | |
|---|---|
| Clear days in the year | 148 |
| Variable " " | 171 |
| Cloudy " " | 46 |
| | 365 |

Mean monthly temperature for 1851:—

| | | | |
|---|---|---|---|
| January | 36.38° | July | 79.12° |
| February | 42.48 | August | 76.47 |
| March | 47.97 | September | 72.90 |
| April | 54.34 | October | 55.46 |
| May | 68.76 | November | 41.90 |
| June | 73.94 | December | 30.86 |

| | |
|---|---|
| Mean temperature of the year | 56.71 |
| Highest temperature (July 13 and 27) | 98° |
| Lowest temperature (Dec. 16) | —4° |
| Coldest day (Dec. 16) | —1° |
| Mean annual temperature from 1841 to 1850 inclusive | 55.54° |

*Remarks.*—The quantity of rain that has fallen this year is eighteen inches less than usual. Several *squalls*, of short duration, have occurred during the year, but no *storms;* high winds very rare, and no notable changes at the periods of the equinoxes; striking characteristics of this midland region. Thunder on the morning of the 30th inst., December.

River full of ice on the 16th, firmly frozen on the 20th, and open on the 29th.

The frost on the 2d of May appears to have been without precedent in its injurious effects on vegetation. The summer—June to September, four months—was the hottest and driest on my record. December, 1845, was three degrees colder than December, 1851.

The mean temperature in all those observations is the medium of the minimum and maximum degrees of the day.*

* For the above tables we are indebted to John Lea, Esq., Cincinnati, Ohio.

*Table intended to show the State of the Weather in Memphis during each month of the year* 1851.

| Month. | Mean temperature. | | Rain in inches. | REMARKS. |
|---|---|---|---|---|
| | 9 A. M. | 3 P. M. | | |
| January | Not | stated | | Mild and pleasant; greatest cold 17°, near the end of the month. |
| February | | | 8.77 | Mild; on 16th, at 9 A. M., thermometer 28°, only day below 32° at that hour. Frequent rains. |
| March | 55.° | | 2.+ | Unusually mild and steady; 5 showers. Pneumonia, bronchitis, and consumption. |
| April | 55. | | 3.+ | Mild for first 8 or 10 days, then cold and frost for several days. Pleasant. |
| May | 70. | | 2.88 | Clear, dry, and pleasant; 8 showers. Latter part great drought commenced. |
| June | 80. | | 1.— | Clear, hot, and dry. |
| July | 81.90 | 87.74° | 0.70 | Clear and hot, few clouds; winds generally S., S.E., and S.W. |
| August | 83.90 | 86.35 | 1.22 | Clear, hot, and dry; regular sultry night and day; few showers. |
| September | 76.30 | 85.06 | 0.20 | Continued heat day and night; very few clouds. |
| October | 59.96 | 68.16 | 0.85 | Regularly clear and warm. |
| November | Register | lost | | Remarkably pleasant except for the dust; drought continued. |
| December | 40.45 | 46.35 | 4.14 | Pleasant. The rains occurred in the latter part of the month. |
| | | | 24.76 | Total rain, which, with what fell in November, |

would probably have amounted to 25 or 25.5 inches; it would seem a very small annual amount for that latitude, even if we assume the rain of January to be equal to that of February. No adequate means exist of ascertaining the mean annual temperature. The mean temperature of March, April, May, and June is given as in the table; after that the mean is given for 9 A. M. and 3 P. M., the average of which would not make the daily average. The monthly mean is probably a little more than that of 9 A. M.

*Table showing the Mortality of the City of Memphis for the year* 1851, *with the Diseases classified. Prepared from the Records of the Board of Health.*

| DISEASES. | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | Total. | REMARKS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Asiatic cholera | ... | ... | ... | 1 | 24 | 47 | 17 | ... | ... | 1 | ... | 4 | 94 | Although no information has been furnished as to the symptoms or treatment of any of the diseases of Memphis; and, although the classification of diseases adopted by the authorities of Memphis differs so widely from that adopted by this Association, this table is presented, in connection with the topography and tabular view of the weather, as affording subject-matter for serious consideration. |
| Diarrhœa | 3 | ... | 1 | 2 | 3 | 10 | 6 | 3 | 7 | 12 | 5 | 4 | 56 | |
| Dysentery | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 | 1 | 2 | 1 | 8 | |
| Cholera infantum | ... | ... | ... | 1 | 4 | ... | 20 | 13 | 2 | ... | ... | ... | 40 | |
| OTHER DISEASES. | | | | | | | | | | | | | | |
| Digestive system | 2 | ... | 1 | ... | 4 | 4 | 3 | 4 | 6 | 6 | 2 | 5 | 37 | |
| Nervous " | 1 | 2 | ... | 2 | 6 | 8 | 8 | 8 | 6 | 2 | 1 | 4 | 48 | |
| Respiratory " | 6 | 2 | 13 | 7 | 9 | 12 | 11 | 3 | 7 | 2 | 9 | 8 | 89 | |
| Generative " | ... | 1 | ... | ... | ... | 2 | ... | 2 | ... | 2 | ... | ... | 7 | |
| Remittent fever | ... | 1 | ... | ... | ... | 4 | 4 | 6 | 13 | 4 | ... | 2 | 34 | |
| Congestive " | ... | ... | 2 | ... | 2 | ... | 2 | 4 | 12 | 14 | 1 | 2 | 39 | |
| Typhoid " | 1 | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | 3 | 1 | 4 | 15 | |
| Scarlet " | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | |
| Smallpox | 3 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | |
| Dropsy | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | 1 | 2 | 1 | ... | 9 | |
| Cancer | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 2 | |
| Erysipelas | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 2 | |
| Disease of heart | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | ... | ... | 4 | |
| Chickenpox | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | |
| External causes | ... | 3 | ... | 2 | 2 | 2 | 3 | 2 | ... | 2 | 2 | 3 | 21 | |
| Old age | ... | 1 | ... | 1 | 1 | 3 | 1 | ... | ... | 1 | ... | 1 | 9 | |
| Not specified | 4 | 13 | 20 | 19 | 14 | 32 | 13 | 22 | 16 | 19 | 13 | 12 | 197 | |
| | 22 | 26 | 37 | 35 | 70 | 145 | 87 | 61 | 73 | 72 | 38 | 50 | 717 | |

| | | |
|---|---|---|
| Deaths under 5 years | . . . . . | 208 |
| " between 5 and 20 years | . . . . | 51 |
| " " 20 and 40 " | . . . . | 195 |
| " above 40 " | . . . . | 100 |
| " of ages not specified | . . . . | 163 |
| | | 717 |

*Bilious fever* began in Covington about the first of June, 1851; increased gradually until the early part of July, when it had become very prevalent; and continued so until the middle of September, when it began gradually to subside.

The causes of this fever are to be sought for in the state of the weather, &c., detailed in the beginning of this paper.

It was usually ushered in by a decided chill, frequently by moderate chilliness of some duration, aching of the head (especially of the forehead), back, and limbs; great soreness of the muscles (or at least of the skin), soon followed by hot skin, quick full pulse, thirst, scanty urine. The tongue was coated with a yellowish, dirty fur; sometimes nausea and vomiting; the bowels were usually costive,

but sometimes affected with diarrhœa. It was sometimes followed, sometimes preceded by an attack of dysentery.

*Treatment.*—Quinine was given in every case, and without regard to heat of skin or quickness or fulness of pulse, except that when there was but little fever it was occasionally given in diminished doses. Usually, it was given in doses of four grains every two or four hours, until it produced ringing in the ears. It was occasionally united with blue mass, calomel, or ipecacuanha.

As a sudorific, the neutral mixture, with emetic tartar and sweet spirits of nitre, was found peculiarly useful. (Evans and Chambers.)

This fever seems to have been allied to the *breakbone* fever of 1780, and the *dengue* of more recent times; and remarkable principally for its very general prevalence, febrile pains, and great amenability to treatment.

In Oldham, there was considerable intermittent fever, 28 cases having occurred in Dr. Swain's practice; but he thinks nothing in either symptoms or treatment worthy of special notice. All the cases recovered.

Dr. Ray, of Paris, Bourbon Co., treated 57 cases of intermittent and remittent fever, but details neither symptoms nor treatment.

*Table intended to show at one View the Age, Sex, and Colour of those reported as suffering from Bilious Fever, the Mortality of each, and the Average Time of Attendance.*

| Reported from | Colour. | Number of cases attended. | | | | | | | Fatal cases. | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | |
| | | Male. | Female. | Male. | Female. | Male. | Female. | Total. | | | | | | | Av. days attend. | |
| Covington | W. | 23 | 12 | 21 | 5 | 12 | 4 | 77 | ... | ... | ... | ... | ... | ... | $4\frac{3}{4}$ | Evans and Chambers, |
| " | B. | 1 | 1 | ... | 1 | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | Covington. |
| Oldham | W. | 7 | 2 | 3 | 3 | 1 | 1 | 17 | ... | ... | ... | ... | ... | ... | 4 | Dr. J. Swain, |
| " | B. | 5 | ... | 2 | 2 | 2 | ... | 11 | ... | ... | ... | ... | ... | ... | ... | Ballardsville. |
| Bourbon | W. | ... | ... | ... | ... | ... | ... | 38 | ... | ... | ... | ... | ... | ... | ... | Dr. L. G. Ray, |
| " | B. | ... | ... | ... | ... | ... | ... | 19 | ... | ... | ... | ... | ... | ... | ... | Paris. |

*Typhoid Fever.*—Although there has been general good health in the vicinity of Georgetown during the last two years, yet in one neighbourhood four families, containing in the aggregate 71 persons, afforded 32 cases of typhoid fever, of which 10 died, in a little more than a year. The writer of this saw five of these cases in one

family; two had died previously in the same family. In addition to these five, he saw, during the year, at different points, 16 others.

Of the 16, 8 were in four families; in one of which two cases occurred at the same time. In one family, one case occurred upon the convalescence of the former. In the other two families, the cases occurred at intervals of five and ten months respectively. Some would say perhaps that, in the neighbourhood mentioned, an epidemic prevailed; others would not. Of the 21 cases, 14 were the Reporter's from the commencement, and one came under his care after three or four days' illness; 6 were not his, but treated in conjunction with other gentlemen. Of the 15 one died, of the other six two died.

The *causes* of typhoid fever are acknowledged not to have been clearly ascertained, and many observations are required to put the matter clearly at rest. There seems to be considerable reason, however, to believe that it depends on a modification of that which produces bilious fever rather than on a *different* cause. Typhoid and bilious fevers do not, so far as is known to your Committee, usually prevail in the same localities. Yet the causes of bilious fever are to a certain degree present in sections of country where typhoid fever is found, as is proved by the occasional occurrence of bilious fever, dysentery, cholera morbus, cholera, and cholera infantum. In Bourbon, Fayette, and Scott counties, Kentucky, where typhoid is the prevailing fever, there are few natural ponds or marshy places; but there are many artificial pools for watering horses and cattle. On all the farms, which are usually large and well cultivated, there are more or fewer points where vegetable decomposition is constantly going on. In Woodford, there are fewer artificial pools, their place being supplied by springs and rivulets. Hence the sources of malaria are limited. One fact worthy of some consideration is that where typhoid fever scourges a family severely, most commonly there is something wrong about the dwelling. This consists usually of some decaying vegetable matter. The house itself has been suffered to get out of repair; snow, rain, and wind being admitted through broken windows or otherwise. If it has a cellar, it has been made the receptacle of vegetables or filthy matter; or if, as has been most common, it has no cellar, the house has no means of ventilation beneath the floor, but the sleepers were originally placed either on or very near to the surface of the earth, the spaces between which have become filled to a greater or less extent—many times to the floor —this last having become imperfect from age. For example, of

the 21 cases in the table furnished by Dr. Sutton, 4 occurred in houses that were old, but not particularly out of repair, and against the cellars of which nothing particular could be said; 12 in houses that were old, with the floors on or very near the ground, and 5 in houses which were not old, but standing from twelve to twenty years, and the floors near to the ground. In divers instances, the disease appears to have been brought on by exposure to cold; *e. g.* during the past winter three boys of one family were attacked, within a few days, after long exposure to great cold in sliding down hill. It is true that the house in which they lived was old, and a considerable quantity of clear water was in the cellar. But no other member of the family was sick.

Of *contagion* as a cause of this disease, your Committee have no opinion; notwithstanding, they are fully aware that many facts exist which go to support such an opinion.

*Persons most liable.*—From the returns of the census for Fayette and Scott Counties, it would appear that one white died of typhoid fever for every five hundred and fifty-one white inhabitants; and one for every three hundred and eighty of the slave population; thus indicating a considerably greater mortality among the latter. The sexes may be considered equally liable. A large majority of the deaths were between ten and thirty years. Thus, in Fayette County, of every 291 between the ages of 10 and 30, one died; whilst, of every 899.5 of all ages below 10 and above 30, only one died of the disease.

*Time of Prevalence.*—This disease pays little regard to seasons.

*Symptoms.*—Pain in the head more or less marked, giddiness upon rising, buzzing in the ears, in advanced stage delirium. Tongue whitish, with red papillæ sticking through the fur; gradually becoming red and dry; thirst; occasional nausea and vomiting—loss of appetite. Pain and meteorism of bowels; gurgling of bowels; diarrhœa of fetid odour; occasionally, in advanced stage, hemorrhage from bowels.

Dr. Chambers and Evans describe the discharges from the bowels, at Covington, as being liquid, large, frequent, pea-green in colour, and without smell. Chilliness at onset, followed by moderate reaction of pulse and warmth of skin; pulse gradually increasing in frequency and diminishing in volume until improvement begins. Skin after a few days frequently loses its increased heat; becomes dry. Sometimes, during the second week, an eruption of rose-coloured spots. Sometimes, at a later period, there is a crop of sudamina.

*Treatment.*—If much nausea is present, an emetic of ipecacuanha. If much pain in the head, cupping, leeching, or a blister to the back of the neck—one or more, according to the urgency of the case. If an emetic be not indicated, or after its use, ten or twelve grains of calomel or blue mass united with six to ten grains Dover's powder, or its equivalent of ipecac. and morphia as a purgative. If the heat of skin is considerable, frequent sponging with cold or warm water, and small doses of ipecac. ¼ grain, and morphia $\frac{1}{16}$ grain. Or, if a tendency to cerebral disturbance, hyoscyamus ½ grain, camphor three grains, ipecac. one grain, in repeated doses. If pain in bowels is severe, a large blister over the abdomen. When much diarrhœa, opium, paregoric, and ess. menthæ or injections of laudanum and starch, or a pill of opium pushed into the rectum above the sphincter, and a resolution to withstand the inclination to stool. Or, laudanum ℥i, sweet oil ℥ii, and oil of turpentine ℥ii: M. A teaspoonful every two, four, or six hours. When the diarrhœa is protracted, nitrate of silver and opium, each ¼ to 1 grain, three or four times a day, made into a powder or pill, with starch, sugar, or pulverized gum Arabic.

When there is a stage of depression perceptible, ten grains sulph. quiniæ once or twice a day; one of them being from six to eight hours before the time for the depression. When quinine has been clearly indicated in this disease, it has been more frequently satisfactory in its effects than any other remedy.

When there has been free hemorrhage from the bowels, it has been treated in different ways, by large doses of calomel, by smaller doses of calomel and opium, by injections of ice-water, by injections of acetate of lead. Patients have recovered after each, and after being left entirely to itself. It is doubtful whether any of the means have controlled the symptoms. Dr. Ramsey, of Knoxville, looks upon spirits of turpentine as a certain remedy.

Diet should be of a mild, farinaceous character, until some amendment takes place, or the powers of the system begin to give way. In either case, some amendment of diet may be made, and gradually made more nutritious.

Thirst may be allayed by moderate draughts of iced water or any herb tea. Great attention must be paid to airing the room, cleanliness of the patient and of his apartment, avoidance of undue noise and light, of exciting emotions or depressing influences.

Drs. Evans and Chambers treated the disease by Hope's mixture, for looseness of the bowels; castor-oil and oil of turpentine in small doses when necessary to move the bowels. When much tenderness

in right iliac fossa, leeches in proportion to the tenderness; bran poultices over the abdomen. When the skin was hot and dry, warm or cold sponging of the surface. Food was given freely from the onset; at first purely vegetable, but highly nutritious; after ten or fifteen days, animal broths with vegetables—as rice and chicken-soup. After a few days, some wine was added.

Dr. Lenoir, of Roane Co., Tenn., remarks that, although one dose of calomel at the beginning did good, repeated doses did not answer. He usually preferred, even at the beginning, hydrarg. cum creta to calomel. This was borne well, and in some cases was repeated daily until the white fur left the tongue. At the same time giving antim. et potas. tart. during the exacerbation, and tonics and occasional stimulants (when the system was depressed) in the interval. Quinine was given combined with rhubarb and Dover's powder, as the state of the case required.

*Table showing the Age, Sex, and Colour of those reported as suffering from Typhoid Fever, and the Relative Mortality and Average Time of Attendance.*

| Reported from | Number of cases attended. | | | | | | | | Fatal cases. | | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | | |
| | Colour. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Av. days attend. | |
| Scott County | W. | 3 | 4 | ... | 4 | ... | ... | 11 | ... | 1 | ... | ... | ... | ... | 1 | ... | W. L. Sutton, |
| " | B. | 2 | 3 | 1 | 2 | ... | 2 | 10 | 1 | 1 | ... | ... | ... | ... | 2 | 15 | Georgetown. |
| Covington | W. | 3 | 1 | ... | 1 | 1 | ... | 6 | ... | ... | ... | ... | ... | ... | ... | ... | |
| Oldham | W. | ... | ... | 3 | 2 | ... | 2 | 7 | ... | ... | 1 | ... | 1 | ... | 2 | 13 | J. Swain, |
| " | B. | ... | 2 | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | Ballardsville. |
| Knoxville, Tenn. | W. | 3 | 2 | 4 | 5 | ... | 1 | 15 | ... | ... | ... | ... | ... | ... | ... | ... | F. A. Ramsey, |
| " " | B. | 2 | 1 | ... | 3 | ... | 1 | 7 | 2 | ... | ... | 1 | ... | ... | 3 | ... | Knoxville, Tenn. |
| Roane Co., " | W. | 2 | 1 | 4 | ... | ... | ... | 7 | ... | ... | ... | ... | ... | ... | ... | ... | B. B. Lenoir, |
| " " | B. | 2 | ... | 6 | 7 | 2 | ... | 17 | ... | ... | ... | 3 | ... | ... | 3 | 21 | Roane Co., Tenn. |
| Bourbon | W. | ... | ... | ... | ... | ... | ... | 10 | ... | ... | ... | ... | ... | ... | 2 | ... | Dr. Ray, Paris. |

Diarrhœa preceded the appearance of cholera and dysentery at Covington, progressed with them, and subsided soon after they had disappeared.

The *causes* and *prophylactics* were the same as of those diseases. The prominent symptom was a greater or less looseness of the bowels, the stools being very various as to consistence and colour, as greenish, yellowish, blackish, and from the consistence of water to that of pitch.

Treatment consisted of a dose or two of calomel, opium, camphor,

and chalk. If the discharges were large and thin, opium and acetate of lead were given. When they were simply feculent, nitric acid, laudanum, and camphor water [Hope's mixture].

At Knoxville, Tenn., diarrhœa prevailed to a considerable extent, yet was not to be considered as epidemic. Calomel, castor-oil, and French brandy, or in lieu of calomel, hydrargyrum c. creta. Dr. Ramsey thinks it very important that this last article be freshly prepared. He also considers attention to the gums very important when the disease occurs in children during dentition.

A few cases are reported by Dr. Swain, of Ballardsville, but they seem to have been readily managed by ordinary remedies.

The same remark applies to forty-seven cases reported by Dr. Ray, of Paris, Ky.

*Table showing the Age, Sex, and Colour of those returned as suffering from Diarrhœa, with the Average Time of Attendance.*

| Reported from | Number of cases attended. | | | | | | | | Fatal cases. | | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Colour. | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | Total. | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | Total. | Days attended. | |
| | | Male. | Female. | Male. | Female. | Male. | Female. | | Male. | Female. | Male. | Female. | Male. | Female. | | | |
| Covington | W. | 10 | 16 | 28 | 19 | 17 | 5 | 95 | ... | ... | ... | ... | ... | ... | ... | ... | Evans and Chambers. |
| " | B. | ... | ... | ... | ... | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | 7 | |
| Knoxville, | W. | 19 | 3 | 5 | 5 | 3 | 2 | 37 | 1 | ... | ... | ... | ... | ... | 1 | ... | Dr. Ramsey. |
| Tenn. | B. | ... | 2 | 1 | ... | ... | 1 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | |
| Oldham Co. | W. | 3 | ... | ... | 2 | 2 | 1 | 8 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. Swain. |
| " | B. | 3 | ... | 2 | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | |
| Bourbon | W. | ... | ... | ... | ... | ... | ... | 43 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. Ray, Paris. |
| " | B. | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | |

*Cholera infantum* prevailed to a considerable extent in Covington during the summer of 1851. In addition to the great heat and malarial influence, teething and overfeeding are charged as causes of the disease.

The *prominent symptoms* were frequent discharges of thin watery fluids from the stomach and bowels, rapid failure of the pulse, coldness of the extremities, half-open, red, sunken eyes, pinched features, excessive thirst, restlessness, moaning, and quick fretful cries. Sometimes considerable heat of head.

*Treatment.*—For the disturbance of the stomach and bowels, a sinapism was applied to the epigastrium, and calomel alone in doses of half grain or a grain; or the same quantity, mixed with half a

grain of camphor and five grs. chalk, was given every half hour, hour, or two hours until the vomiting and purging were allayed and bilious purging established. Sometimes ten or twenty drops of paregoric were added to each dose of the above medicine. If the purging was profuse and exhausting, astringent injections, as acetate of lead, were administered after each evacuation. In many cases where the vomiting was excessive, ice used freely had a most happy effect. It was also of great service in allaying the distressing thirst; whereas drinking cold water always aggravated the disease.

In only a few cases, and those in which there was no cerebral affection, a small portion, as the sixteenth of a grain, of opium was added to the calomel; or laudanum was added to the injections. No food and very little gum or rice-water for drink was allowed. In a few hours, the above treatment would usually allay the vomiting and purging. Occasionally, however, instead of good bilious purging, the calomel would produce green [spinach!] mucous stools. In these cases, the aromatic syrup of rhubarb, paregoric, and carbonate of soda were given until feculent stools were obtained.

Sometimes, after the vomiting and purging had been stopped by the use of calomel for twelve or eighteen hours, coldness of skin would continue, and the child would lie torpidly in the mother's lap, with the eyes half closed, a picture of almost perfect lifelessness. In these cases, enemas of warm salt and water, a few drachms of syrup of rhubarb, or a small dose of castor-oil with oil of turpentine, would cause the expulsion of large quantities of dark pitchy matter with almost immediate relief; the heart, the skin, indeed all the organs, quickly regaining their healthy functions.

The gums were freely lanced whenever they presented the slightest appearance of tumidity, heat, or unnatural redness.

At Knoxville, Tenn., *cholera infantum* prevailed to a considerable extent, though it could not be said to be epidemic. Dr. Ramsey commenced his treatment by a large dose of calomel at once instead of smaller doses at short intervals. He also attaches much importance to lancing the gums when swelled.

In Oldham Co., Ky., were some cases of this disease, but no treatment is detailed.

*Table intended to show at one View the Sex and Colour of those reported as suffering from Cholera Infantum, and the Mortality of each, also the Average Time of Attendance.*

| Reported from | Number of cases attended. | | | | | | | | Fatal cases. | | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | | |
| | Colour. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Av. days attend. | |
| Covington | W. | 20 | 21 | ... | ... | ... | ... | 41 | ... | ... | ... | ... | ... | ... | ... | 4½ | Evans and Chambers. |
| " | B. | 2 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | | |
| Oldham Co. | W. | 9 | 2 | ... | ... | ... | ... | 11 | ... | ... | ... | ... | ... | ... | ... | 8 | Dr. Swain, Ballardsville. |
| " | B. | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | | |
| Meade | W. | 3 | 2 | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | 4 | Dr. J. V. Withers, Brandenburg. |
| " | B. | 2 | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | | |
| Knoxville | W. | 9 | 8 | ... | ... | ... | ... | 17 | 1 | ... | ... | ... | ... | ... | 1 | | Dr. F. A. Ramsey. |
| " | B. | 1 | 5 | ... | ... | ... | ... | 6 | ... | ... | ... | ... | ... | ... | ... | | " |
| Bourbon | W. | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | | Dr. Ray, Paris. |

*Cholera.—Causes.* Your Committee having expressed the opinion that cholera, bilious fever, &c. are due rather to modifications of the same remote causes than to different ones, would direct attention for a moment to the facts detailed in the topography of Memphis, Covington, and Brandenburg—facts which have been communicated since that part of this report was written. These places, especially Memphis and Brandenburg, present sources of malaria altogether unprecedented, with an amount and intensity of disease altogether commensurate.

At Memphis, the backwater which surrounds the city is usually agitated and kept moderately pure by frequent showers ; and after its subsidence, the surface, lately covered by the water, is washed off by showers more or less heavy: but in 1851, the water remained high until August, and no showers washed off the lately covered surface. So the dry hot weather of summer and fall, instead of being a cause of health, as it usually had been, was productive of a mortality nearly double that ever before experienced. In addition to this source of disease, much grading of the streets had been performed, which is always a source of more or less disease.

At Brandenburg, 3.43 per cent. of the population were cut off in six days. How many more would have died if the village had not been depopulated, can never be known. No case recovered, and the disease was confined to those living in the hollow and on its immediate confines, and those who rashly exposed themselves to this source of disease.

Whilst Dr. Shanks confidently believed, in 1849, that the cause of cholera was portable, and had been introduced into Memphis in that manner, he says the case was widely different in 1851, when he as confidently believes it was of local origin.

This malarial influence is sometimes preceded and accompanied by a certain insensible constitution of the air, which exerts a very decidedly depressing influence on the organs of digestion From this cause a great many persons find themselves troubled with some form of dyspeptic symptoms, and have their digestion disturbed by very slight and even inappreciable causes.

The exciting causes are whatever may destroy the equilibrium in the powers of the different organs of the body. Thus, undue fatigue, exposure to inclement or sudden vicissitudes of weather, great mental distress, drastic purgatives, especially saline cathartics, residence in low damp situations, or dirty, crowded houses: any one or more of these was sufficient to bring on an attack. But, as might reasonably be expected, it was most commonly brought on by some error in diet; the eating of unripe vegetables, green corn, young potatoes, unripe fruits, &c. &c. Even an excess of diet, proper in itself, would bring on the disease. A costive state of the bowels, which had been encouraged under the impression that it afforded an exemption from the disease, sometimes appeared to bring it on. Drs. Evans and Chambers, of Covington, expressly exonerate fear, so universally considered a potent exciting cause, from any influence in producing it.

*Time of Prevalence. Range.*—It is not stated at what time the cholera commenced at Covington, or how long it continued. It was confined to the city of Covington and the town of Newport.

At Memphis, the first case appeared the last of April, and seems to have ceased as an epidemic the last of July. We are not informed whether it spread into the surrounding country.

At Brandenburg, it commenced on 29th June, after a great and sudden fall of temperature, and ended the 5th July. Was confined to the hollow and parts immediately adjacent.

*Persons most liable.*—Upon this head we have no information from Memphis. At Covington, the blacks suffered largely in proportion to their number, there being 6 blacks to 48 whites. In the population, there is 1 black to 26 whites: 32 males and 22 females suffered; 4 males and 2 females died. These last are presumed to have been all whites. At Brandenburg, the whites suffered most, 19 of the 21 cases being whites—13 males and 8 females.

*Prophylaxis.*—This is easily deduced from the enumeration of the exciting causes. An avoidance of all undue exertion, and of exposure to improper weather; of all crude and indigestible food, or even of any excess in proper food; equanimity, and a resolution to meet any proper duty firmly; a prompt attention to all dyspeptic symptoms, as diarrhœa, pain or flatulence of the bowels; in one word, by carefully preserving the body in a state as nearly healthy as possible, was the only, but, at the same time, nearly a certain means of avoiding the disease.

*Causes which arrested the disease.*—At Covington, no light is thrown upon this head. At Brandenburg, it was the removal of the entire population from the infected district. At Memphis, it is difficult to say what arrested the disease, unless we suppose it was done by a modification of the "epidemic constitution of the season." If we examine the statements under the head of Topography, and also the table of the weather, we shall see that at the time of the subsidence of cholera the causes of disease were by no means diminished, but rather aggravated. In fact, the mortality table shows that, as cholera abated, remittent and congestive fevers, cholera infantum, diarrhœa, and other diseases of the digestive system, increased.

*Symptoms. Digestive System.*—Cholera in a very few instances made its appearance suddenly, without premonition; but very generally it had been preceded for from six hours to as many days by some disturbance of the digestive functions, uneasiness in the bowels, borborygmi, or diarrhœa. In many cases, the disease commenced with vomiting. This might bring up first any undigested food which happened to be in the stomach; afterwards a watery fluid more or less mixed with flocculi. Sometimes the matter ejected was a dirty ropy mucus. In some cases, the vomiting appeared contemporaneously with the purging; in others only at a later period, and in some not at all.

Purging, in a very few instances, set in, without previous disturbance of the bowels, but most commonly after a diarrhœa of longer or shorter duration. In the latter cases, the matter discharged changed suddenly, from being more or less fecal, to a watery, colourless fluid, in large quantities, sometimes mixed at first with undigested food. A very few of these stools, sometimes a single one, would bring on great prostration, or even collapse.

The tongue and mouth showed little change at the onset, but great

thirst occasionally supervened, and towards the latter stages, especially in fatal cases, the tongue became cold.

*Of the Nervous and Muscular System.*—In a large proportion of cases, perhaps more than half, no *cramps* appeared at any time. In some cases, they set in early; most commonly only after some continuance of the purging. Indeed, some persons could not be induced to believe that anything material was the matter until taken with cramps in the latter stage of the disease. The cramps, as well as vomiting and purging, usually abated a few hours before death. Great anxiety and restlessness were prominent symptoms in many cases.

*Of the Sanguiferous System.*—The pulse usually soon acknowledges the effects of the large drain from the stomach and bowels, becoming gradually weaker. Some, however, towards a state of collapse, had a pulse of considerable fulness, yet having a soft, woolly feel, which was sure to go into collapse if not speedily remedied.

As the disease advanced, the pulse became less and less until it was imperceptible. As the pulse failed, the colour of the face, lips, &c. disappeared, to be succeeded by lividity and blueness.

*Of the Skin.*—Contemporaneous with the failure of the pulse, the skin lost its warmth and colour, the extremities began to get cold, the features and hands, indeed the whole body, began to shrink, and the surface to become covered with a cold clammy perspiration.

Some in the last stages presented the appearance, in the colour of the face, condition of the eyes, and the character of the respiration, but not otherwise, of persons dying of apoplexy.

*Treatment.*—In every case, and in every stage of the disease, a constant, uninterrupted, horizontal position was enjoined; also a determined resistance to every inclination to evacuate the stomach or bowels. Also sinapisms were used throughout the disease; in the early stage, to allay vomiting and uneasiness of the bowels—and in the latter stage, to support the capillary circulation. Great care was also used to warm and keep warm the surface of the body, by heated bodies applied about the extremities, and sometimes around the trunk; and by keeping the patient well covered with bedclothes.

*Emetics.*—Without regard to the period of the disease, if the patient had recently eaten heartily, or if he was frequently throwing up a dirty yellowish ropy substance, we give an emetic of salt and mustard, a tablespoonful of each to a glass of water. This, without

producing nausea, would empty the stomach, many times prevent further vomiting, and make an impression favourable to the retention of such medicines as might be needed.

*Mercurials.*—If an emetic had not been considered necessary, or after its operation, if the case seemed mild, there being little vomiting, no cramps, purging not having much affected the pulse, we gave calomel two grains, camphor two or three grains, opium half a grain, and, if there was acidity of the stomach, five to ten grains of chalk, or four of acetate of lead, every hour or half hour, until the patient slept, or the symptoms of the disease had disappeared. Usually from four to six doses answered the purpose. When the patient was threatened with collapse, the vomiting frequent and purging copious, coldness having invaded the extremities, and the pulse beginning to flag, calomel, camphor, capsicum, and acetate of lead were given. Or sometimes calomel alone, in doses of ten to forty grains every half hour, or one grain every five or ten minutes, was given. A single large dose of calomel would sometimes stop continued vomiting.

*Anodynes and Antispasmodics.*—When there were serious objections to the use of mercury, as a scrofulous diathesis, or the patient having been previously badly salivated, or very prone to be salivated, we used the following mixture, in teaspoonful doses, every half hour or hour until the symptoms disappeared: ℞. Camphor, capsicum, black pepper, assafœtida, acetate of lead, āā gr. x to xxx; opium gr. iii; brandy f℥i. If the head was affected, the opium was omitted. In one case, where a profuse gush of serum had prostrated the patient, and there was an imperative demand for further evacuations, the one-half of this mixture (without the opium), given at a single dose, speedily quieted all uneasiness; and the patient quickly recovered without further treatment. Eating ice is one of the best means of allaying vomiting, and also of relieving a certain sense of distress and sinking experienced at the epigastrium, within our command. One drachm of camphor dissolved in f℥i of sulphuric ether, of which a teaspoonful in a little cold water is taken, will be found very useful in allaying obstinate vomiting. Chloroform, in doses of half drachm or a drachm, was found a powerful agent in arresting vomiting. It was also found a most certain remedy for those cramps which came on before collapse. After collapse, it, like everything else, was of little use.

Patients would sometimes be very much annoyed by rumbling noises in the bowels; for which we gave, with satisfaction, teaspoonful

doses of the following mixture: R. Paregoric, tinct. valerian, ess. menthæ pip., sulph. ether, of each equal quantities.

*Injections.*—When there was danger of collapse, vomiting frequent, purging copious, coolness of extremities, &c., we used as an enema an ounce of compound tincture of myrrh (No. 6) in water, after which the anus was to be pressed firmly by the hand over a folded cloth, until the disposition to return it had passed away. Sometimes this would be in a few minutes; sometimes two or three hours would elapse before the pressure could be removed.

We have not bled in any case. We gave strychnia in one case, and saw it given in another without any effect. They were both bad cases. After using acetate of lead freely, for three years, we have seen its poisonous effects in but one instance; a little girl had colic badly.

Dr. Withers, of Brandenburg, treated the first six cases by calomel, opium, stimulants internally and externally, astringents by the mouth and injection, all given in heroic doses. The next cases were all treated by free bloodletting at the beginning, combined with the above remedies as auxiliary; all died.

It is very much to be regretted that nothing as to symptoms or treatment has been furnished from Memphis.

*General Reflections.*—Your Committee are unwilling to leave this subject without presenting a few general reflections, which, though trite and commonplace, they feel cannot be too frequently, or too strongly impressed upon the minds of the community.

It is a great misfortune to the profession and to humanity that each individual, when threatened with cholera, or actually labouring under it, is loth to believe that there is anything the matter with him, or that he is in the least danger. A striking example of this is furnished by Dr. Shanks, *Am. Journ. Med. Sci.*, July 1849, who says, "I found the patient sitting up in a damp confined cabin of a flat-boat, blue, shrunk, and perfectly pulseless at the wrists, complaining only of cramps, and vomiting of the water which his intense thirst induced him to swallow." Even many physicians are unwilling to acknowledge anything as cholera, except there are present cramps, blue and cold surface, and little or no pulse. It is many times very difficult to define what is, and what is not cholera; and much more difficult to say which case may become cholera and which will not.

The path of safety, when epidemic cholera is present or near at hand, is to consider every case of diarrhœa as the first stage of cholera—nay, all the various indescribable dyspeptic symptoms,

which are so rife at such times, as cholera in embryo—which may be readily cured whilst this state of things lasts. We should remember, too, that we have no assurance how long this state will last—that it is liable at any moment to give place to violent vomiting and purging, cramps, and all the horrible catalogue of cholera symptoms. There was sense in the aphorism that cholera was a disease to be prevented, but not cured—provided men could be aroused to the importance of both branches of the aphorism. For example, Dr. Withers of Brandenburg had many cases of "simple diarrhœa," which he had no idea would, under any circumstances, have become cholera, they were so easily cured. Your Committee, however, are of opinion that the Doctor's services to the community were vastly more important than he believes; that in fact very many, perhaps a large majority, of these simple diarrhœas, if left to themselves a few hours or days, would have presented the same lot of symptoms, and mostly the same end, as his twenty-one cases of acknowledged cholera. Let it be distinctly remembered that, although in every epidemic there are cases which, like a flash of lightning in a clear sky, come on without premonition, and which no wisdom can foresee, and no prudence can avert, yet in nearly every case the initial steps are well marked, the warnings numerous, and the means of prevention certain; and that the safety of the patient depends upon these steps being recognized, these warnings heeded, and these means used.

*Table showing the Colour, Sex, and Age of those reported as suffering under Cholera, with the Mortality of each, and the Average Time of Attendance.*

| Reported from | Number of cases attended. | | | | | | | | Fatal cases. | | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | | | |
| | Colour. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Male. | Female. | Male. | Female. | Male. | Female. | Total. | Av. days attend. | |
| Covington | W. | 4 | 7 | 14 | 6 | 13 | 4 | 48 | 1 | ... | 2 | 2 | 1 | ... | 6 | 1½ | Evans and Chambers. |
| " | B. | ... | ... | 1 | 1 | 2 | 2 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | |
| Brandenburg | W. | 3 | 2 | 4 | 2 | 5 | 3 | 19 | 3 | 2 | 4 | 2 | 5 | 3 | 19 | | |
| Cholera morbus. | B. | ... | ... | ... | ... | 1 | 1 | 2 | ... | ... | ... | ... | 1 | 1 | 2 | ⅔ | Dr. Withers. |
| Bourbon | W. | ... | ... | ... | ... | ... | ... | 6 | ... | ... | ... | ... | ... | ... | 1 | ... | Dr. Ray, Paris.*† |
| " | B. | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | |
| Oldham | W. | 3 | 1 | 3 | 3 | 8 | 1 | 19 | ... | ... | ... | ... | ... | ... | ... | 2⅓ | Dr. Swain,* |
| " | B. | ... | ... | ... | ... | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | Ballardsville. |

* Age and sex not specified, nor duration of treatment.

† Treatment not mentioned.

*Dysentery.*—We find this disease to have prevailed at different points in Kentucky. Accounts have been received from Boone, Fulton, Kenton, Woodford, Madison, Bourbon, Oldham, Meade, and Lincoln Counties.

Several other counties are said to have suffered from it more or less, but, as no authentic information has been received from these, your Committee cannot say to what extent.

Of the *causes* of dysentery your Committee have nothing new to say. The circumstances, which for a long time have been considered favourable for the production of malaria, were very strikingly present at Hickman and at Covington. At the former place, the great rise of the Mississippi River in June seems to have been the great cause of the sickness. The creeks and ravines were filled with back-water to a very unusual degree; and were left, upon the subsidence of the water, covered with mud and decayed vegetable matter. The hot weather of July, August, and September, coming upon this state of things, produced an unprecedented amount of sickness. In the language of our reporter (Dr. John Sutton), "almost every one was more or less sick during the epidemic, and for some weeks enough well persons to attend to the sick could not be procured." As Fulton County has been recently settled, notwithstanding provisions were plenty, yet the best articles for those sick and those predisposed to sickness could not always be commanded.

At Covington, the same remote causes existed in a manner equally marked. On the borders of the Ohio and Licking Rivers and the bottom of Willow Run, from one hundred to four hundred yards wide, as also the flat ground extended towards Willow Run and to the Ohio River, together with the ponds caused by grading the streets, furnished ample sources for the elimination of noxious effluvia.

In Boone County, the causes producing the disease are not specified. It is noted, however, that it prevailed much worse along creeks. That portion of the county which borders on the Ohio River was remarkably exempt; as was supposed, owing to the sandy state of the soil and its elevated position.

In Woodford County, the intense heat of September was considered as the cause, malarial exhalations being presumed to be absent. Nevertheless, the village of Midway, in which the disease was more severe than any other part of the neighbourhood, is situated upon an elevated portion of land, and is bounded on the west by Lee's Branch, which has a border of wet marshy ground about fifty yards wide.

In Bourbon, it is said to have prevailed most in the vicinity of creeks and mill-dams.

*Time of beginning. Duration.*—At Covington, the disease commenced early in May, and continued to the 1st of October.

In Boone, it began on the 14th June, and lasted to the 24th October.

At Hickman, it commenced soon after the subsidence of the June freshet, probably during the first half of July, and continued until the 1st of October.

In Woodford, there had been a few cases during summer, but on the 1st September it became epidemic and continued so for two weeks.

*Prophylaxis* consisted in the avoidance of atmospheric vicissitudes and of crude and indigestible articles of food; temperance in eating and drinking; moderate but not excessive exercise; keeping the bowels in a healthy condition; and suitable clothing.

*Persons most liable to attack.*—At Covington, the disease seemed to pay no regard to colour. There are 26 whites to 1 black in the city. Drs. Chambers and Evans attended 165 whites, of whom 5 died; they attended 6 blacks, of whom none died.

In Boone, of 94 cases seen by Drs. Stevenson and Newton, 85 were whites, of whom 10 died; 9 blacks, of whom 1 died. The census shows 4.22 whites to 1 black in this county. A very marked exemption on the part of negroes was observed. In the town of Burlington, but one case occurred. Farmers, their families and outdoor labourers, were the principal sufferers. 21 males, 27 females are reported by Dr. Stevenson. Of the three who died, one was under 15, one between 15 and 35, and one over 35 years.

In Madison County, the poor suffered severely; also children, especially such as had had any bowel affection previously.

In Woodford, a small majority of the population are blacks. Of 27 cases reported by Dr. Chew, 19 were whites and 8 blacks. The disease prevailed through the neighbourhood generally, but was more fatal in the village of Midway than in the vicinity. Of the 27, 18 were males, 9 females.

In Fulton County, there are 4 whites to 1 black. Of 52 cases 39 were white, of whom 4 died; 13 were blacks, of whom 1 died; 36 males were sick, and 4 died; 16 females were sick, 1 died.

In Oldham, there being slightly more than 2 whites to 1 black, of 15 cases, 8 were white, and 7 black.

In Bourbon, having a small excess of blacks, 44 whites and 23 blacks are returned. No remark as to sex.

*Symptoms. Of the Digestive System.*—In a moderate portion of cases, the appearance of the disease was preceded by a state of costiveness, which had lasted from three to seven days, attended by colicky pains. More commonly, it was preceded by a painful diarrhœa. Again, it set in at once with dysenteric stools. The tongue soon became coated with a white or yellowish fur, and was more or less red. Thirst was urgent. As the disease advanced, the tongue became more furred, dry, red at the edges and tip, sometimes a red streak down the middle. Anon, the fur was converted into a dry, black crest, which made its protrusion difficult. As amendment took place, the tongue began to become more moist and less red; and the fur to separate gradually. Appetite disappeared. In some instances, considerable nausea existed—especially during the paroxysms of tormina. Occasionally, there was much vomiting. Frequent inclination to evacuate the bowels, attended with tormina, tenesmus, and more or less straining at stool. Considerable pain of the abdomen, especially along the track of the colon. The discharges vary considerably. In many cases, they consisted principally of blood; more commonly, of a mixture of blood and mucus. Occasionally, even at the beginning, they would be large and serous, attended with much pain. As the disease advanced, there were sometimes strips of membranous shreds; mucus of mingled colours, or a darkish serum of unsufferable fetor. Towards a fatal termination, the bloody mucus disappeared, and was succeeded by free discharges of a sero-sanguineous character. Occasionally, from the operation of medicine, scybala, or dark green consistent stools would be discharged. These, especially the latter, would be free from the griping and straining which were usually present. As the disease abated, the urgency to stool became less severe and less frequent: thin fecal matter would be occasionally mixed with the stools. In cases which had been somewhat severe, evacuations from the bowels continued to be preceded by considerable pain, for some time after the dysenteric condition of the stools had entirely disappeared.

*Of the Nervous System.*—In a certain number of cases, the disease set in with well-marked chills; or a chilly sensation of considerable duration. This chilly sensation had usually been preceded for several days by a general *malaise*, lassitude, loss of appetite, and sense of emptiness in the abdominal region. Where was usually a considerable depression of the muscular system, occasionally considerable headache, and generally depression of mind. In three of Dr. Stevenson's patients, all females with young children, after con-

valescence had set in, there were violent general muscular spasms, always commencing with a contraction of the thumb into the palm of the hand. In severe cases, great prostration of strength, involuntary discharges, delirium, and sleeplessness were very common. As convalescence set in, these gradually disappeared.

*Of the Sanguiferous System.*—At the commencement, in a few instances, the pulse was strong and full. Most commonly, it was from the beginning small and frequent, sometimes going as high as 140 or even 200 in a minute. Occasionally intermittent, or otherwise irregular.

The respiration was quick and hurried—the breath offensive.

The skin was usually hot at the beginning, and sometimes continued so to the convalescence. At other times, in the progress of the disease, the temperature fell sometimes considerably below that of health—the extremities especially becoming decidedly cold. In a few instances, this state of the skin was accompanied by collapse, which speedily ended in death.

The urine was usually scant, and high coloured; in many cases, attended by very urgent ineffectual efforts to urinate.

Emaciation and muscular weakness were usually considerable, and in many cases extreme.

*Treatment.*—Drs. Chambers and Evans, of Covington, gave mercury in the form of calomel, blue mass or chalk-mercury, in every case, unless the strumous diathesis, previous severe salivation, or some other cogent reason prevented.

When the disease set in with thin diarrhœal discharges, two to four grains most commonly of calomel, in combination with opium, camphor, and chalk, were given every hour or two.

When it began with symptoms of bilious fever, the calomel was combined with opium, ipecacuanha, and sometimes camphor. If there were much vomiting and heat of skin, the ipecacuanha and camphor were omitted.

When the disease set in with severe pain in the bowels, these being costive, it was given in doses of ten or fifteen grains, combined or not with opium, as indicated by the degree of pain. This dose was never or rarely repeated.

Opium, in some form, constituted an important item of treatment in every case. Solid opium, with mercury and other articles; laudanum alone, or with camphor-water, with or without nitric acid—with castor-oil and oil of turpentine—with syrup of rhubarb; sulph. morphia, with blue pill—with camphor water; laudanum in starch, as

an enema. In cases of children, paregoric alone, or mixed with castor-oil and oil of turpentine, was the usual form of administration.

Castor-oil and oil of turpentine in emulsion were frequently given as a laxative, in cases where the bowels had become somewhat costive by the use of opiates or astringents, and especially after the use of calomel. This prescription, with the addition of laudanum, was also given where calomel could not be used, or had been used as far as was judged proper. Scybala and foul secretions were removed, pain relieved, and inflammation abated.

Aromatic syrup of rhubarb was much used as a laxative with children, and in some adults who could not take the oils, and when the saline cathartics were considered objectionable.

*Calcined Magnesia, Epsom Salt, and Cream of Tartar.*—In cases attended by acidity of stomach, and when the oils were offensive, calcined magnesia was given in teaspoonful doses to remove scybala or retained secretions, excited by the previous use of mercury. When there was much tenesmus, and frequent small discharges of bloody mucus, and fever, Epsom salt and cream of tartar were given to the extent of moving the bowels freely, and even producing serous stools. The relief was always prompt and great.

Nitric acid was used when the fever had abated, or at the beginning if the fever was very inconsiderable, in the following form: R. Acid. nitric. gtt. xii; tinct. opii ʒiss; Aq. camphorat. fʒiv. M. Give a tablespoonful to an adult, a teaspoonful to a child, every two hours.

Nitrate of silver was given in a few cases which had become chronic, with marked good effect.

Two or four leeches applied to the anus always had a good effect in relieving tenesmus. Ten or twelve applied along the track of the colon afforded much relief when there was fever, and the pains were intractable to fomentations and internal remedies.

Sinapisms to the epigastrium were found useful in relieving vomiting, and pains in the stomach and bowels. Fomentations of hops, bran, &c. were useful in relieving pain.

Extract of rhatany, with brandy and chalk, was serviceable when the diarrhœa continued long.

Quinia was given in some cases to support the strength.

A recumbent position, and an obstinate resistance of the desire to go to stool, were strictly enjoined.

In the early stages, the diet consisted of bland, farinaceous arti-

cles and demulcent drinks. Later, wine whey, beef tea, and brandy were allowed.

Cold water as a drink, whether of spring, well, cistern, or river, aggravated the tenesmus.

In the adjoining county of Boone, Dr. B. F. Stevenson found small doses of calomel, repeated at intervals, whether alone or combined with other articles, to produce irritation of the bowels. He occasionally gave "a large and full dose" of calomel (probably fifteen or twenty grains), which always seemed to act as a sedative, and at the expiration of from twelve to twenty-four hours produced free, but not frequent, stools, of a dark bottle-green colour, and good consistence. In general, his practice consisted in castor-oil, combined or not with laudanum, as a laxative, and solid opium as an anodyne. He also used acetate of lead pretty freely, with but little benefit. Injections of all kinds he found to do harm. In protracted cases, he found one grain of grated nux vomica, with two of sulphate of zinc, at intervals of two or three hours, an excellent anodyne and astringent. Cold water he found always to aggravate the symptoms.

In the same county, Dr. A. W. Newton used a laxative of castor-oil with laudanum, and powders of calomel, opium, camphor, and ipecac., every three or four hours.

Another physician, of the same county, mentioned by Dr. Stevenson, first purged his patients freely with neutral salts, and then narcotized them for thirty-six or forty hours.

In Oldham County, Dr. John Swain treated the disease by an emulsion of the yelk of one egg, half an ounce of castor-oil, and twenty-five or thirty drops of laudanum every night during the continuance of the disease—this procured a good night's sleep, and a healthy action of the bowels next morning; and one of the following powders every three hours during the day: R. Hydrarg. cum creta gr. xxiv; tannin gr. xii; pulv. Dov. gr. xlviii. M. f. pulv. in chart. No. xii. divid. In addition, he gave laudanum in quantities sufficient to allay the pain in the bowels; or he used sinapisms for the same object. If the bowels were tympanitic, he applied fomentations. If the tenesmus was severe, he gave an injection of two ounces of infusion of white oak bark, a teaspoonful of laudanum, and six grains acetate of lead, after each effort at stool; or an injection of twenty grains nitrate of silver in half an ounce of water.

In Woodford County, Dr. Chew prescribed, in cases in which the

dejections consisted mainly of blood, with little arterial excitement, and considerable muscular debility, a free evacuant of the bowels (probably castor-oil). After that was accomplished, he gave acetate of lead and morphia, suited to the age of the patient, and repeated according to the severity of the symptoms; giving an occasional laxative of Epsom salt and magnesia. If much pain in abdomen, poultices, and injections of acetate of lead. Elm or gum-water, mint tea, &c., for drink.

When the stools were composed principally of mucus, but tinged more or less with blood, with severe pain in the bowels, distressing tenesmus, nausea, considerable and continued fever, and considerable tenderness but slight fulness of abdomen, he gave a powder composed of opium half a grain, ipecac. and nitr. potas. each three grains (at intervals of three or four hours). Injections of castor-oil and laudanum were very serviceable in relieving the tenesmus, and also the irritation which frequently extends to the neck of the bladder. Fomentations to the anus and warm hip-baths were also very beneficial. As a drink, and as nourishment, he placed a very high value on a decoction of the bark (fresh, if it can be procured) of sweet gum (liquidambar styraciflua). He considered it almost a specific. Blisters to the abdomen were of great value.

In cases attended with large serous stools, with more or less mucus mixed with them, less frequent and less painful than in other forms, tongue pale red, thirst urgent, pulse quick, small, and hard, and considerable cerebral disturbance, he gave hydrarg. cum creta, morphia, and ipecac., combined to suit the age of the patient, and repeated according to the urgency of the symptoms. For the cerebral disturbance, blisters to the nape of the neck. For the tympanitic state of the bowels, poultices, especially of hops. In the latter stages, he sometimes gave quinine.

In Fulton County, Dr. Cattell found large doses of calomel or blue mass injurious; but minute doses, with large doses of opium, two grains acetate of lead, and one-fourth of a grain of hyoscyamus at intervals, a good practice. Eating ice and drinking cold water, he also found advantageous.

Dr. Sutton, of the same county, when there was much nausea, or yellowness of tongue, gave an emetic of ipecacuanha. He used cupping to relieve great pain in the head or bowels. Chloroform, added to the volatile liniment, was also very efficient for the same objects. After an emetic, or when one was not indicated, he gave a pill or powder containing three grains of calomel, one grain of

opium, and one-eighth of a grain of ipecac. every hour, until five or six had been taken; then one every three to five hours. For nausea, he gave iced camphorated water, which he found particularly effectual in relieving nausea and thirst. If pain in the bowels continued several days, he applied a large blister to the abdomen. Where there was great tenesmus, he used injections of acetate of lead and laudanum, and suppositories of Castile soap and opium, but did not see that they did much good. Let his patients use rice and gum-water for drink, not cold water.

In Meade County, Drs. Withers and Pusey found bleeding, both general and topical, of doubtful propriety. Mercury, in the forms of calomel, blue mass, or mercury with chalk, was used freely until the secretion of bile was thoroughly aroused, in many cases very nearly to ptyalism, with the best effects. Opiates, in the form of solid opium, tincture of opium, sulph. morphia, Dover's powder, also ext. hyoscyamus, in such quantities as were necessary to relieve pain, were considered indispensable. Astringents were found of great value. Injections of acetate of lead, tannin, and starch and laudanum. Dr. Withers used tincture of kino from the beginning. Fomentations with hop poultices, or cloths wrung out of hot water, and applied over the abdomen, seemed to exert a happy influence upon the tenesmus. They should be used with perseverance.

As diaphoretics and diuretics, ipecac., Dover's powder, and spts. nitr. dulc. were used freely. Blisters (to the abdomen) were used with fine effect when the extremities were disposed to become cool, and other remedies had been pushed as far as prudence warranted. They were also applied to the extremities with benefit.

*Aperients.*—When articles of this class were needed, the mildest, as castor-oil, rhubarb, and soda, were preferred. Dr. W. "cannot too loudly condemn the use of drastic saline cathartics. A dose of this description came very near finishing one of my consultation patients."

*Diffusible Stimuli.*—"It is difficult to select the time for administering articles of this class. When other medicines had been pushed as far as prudence seemed to warrant, and when it still would not do to abs ain from medicines, we used camphor water, brandy and water, &c., but preferred the camphor water mixture in small doses, and increasing the dose according to its effects. The remaining dysenteric symptoms would give way, skin become warm, tongue moist, and the patient rapidly convalesce."

Dr. Joseph Smith, of Danville, Lincoln Co., says: "I *bled* but

little myself, that was well borne; but nearly all the physicians who lived in the midst of the disease speak decidedly in its favour (I mean general bleeding) in the early stages of the attack; some affirming that they never lost a case when they resorted early to the lancet." Calomel and mercurials were of doubtful utility except in the early stage. Saline purgatives were found very useful in the early and active stages by all who tried them. They would alter and check the discharges for a longer period than almost any other means. Besides these, the whole internal treatment, during the febrile and painful stages, was, after some observation, narrowed down to opium and its preparations, and spirits of turpentine ¼ to 1 gr. opium to 15 to 30 drops turpentine every four to six hours, according to urgency; sponging, warm fomentations, mucilaginous drinks, and enemas being the accompaniments. Injections of starch and laudanum, and of infusion of oak bark and acetate of lead, were tried a good deal; but the rectum in most cases was too irritable for their use. Simple warm water seemed most soothing, and did most good. Nitrate of silver, in the very early stages, did good. And after the febrile symptoms had subsided, and the bowels continued obstinately irritable, it was almost the only article which seemed to control and cut short the case. It was used in pill or with mucilage, ⅛ to 1 gr. every four to six hours.

Drs. Ray, of Paris, treat dysentery mainly by the free use of opiates by the mouth and anus, so as to enable the patient to lie several hours undisturbed by tormina and tenesmus. Then they give Epsom salts alone, or combined with calcined magnesia. These remedies are alternately used. Warm hip-baths, warm fomentations, bland mucilaginous diet and drinks, complete the treatment. They do not bleed. With regard to mercury, Dr. L. G. Ray is very emphatic and decided. He says: "In a majority of all the cases in which we have seen it used, it has had a decidedly injurious effect; and we are sure we have seen simple cases of dysentery converted into very grave ones by a dose or two of calomel. We scarcely ever use it at all, unless the patient is nearly or quite free from tenesmus and tormina, and still having a furred tongue, headache, thirst, and a parched dry skin. We then use a dose or two of mercurials combined with Dover's powder, to promote a free secretion of bile and a moist state of the skin. * * * In a case of simple dysentery, we would not give an ounce of salts with a few grains of opium for all the calomel in the shops. We will produce a more free discharge of bile by the use of salts, than you possibly can do by calomel."

As evidence of the propriety of this plan, he declares that for 17 years he has seen an average of 30 cases annually, of which (510) but 5 have died.

*Table intended to show at one View the Colour, Age, and Sex of those reported as affected with Dysentery, with the Mortality of each, and the Average Time of Attendance.*

| Reported from | Colour. | Number of cases attended. | | | | | | | Fatal cases. | | | | | | | Reported by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | Total. | Under 15 yrs. | | 15 to 35 yrs. | | Over 35 yrs. | | Total. | Av. days attend. | |
| | | Male. | Female. | Male. | Female. | Male. | Female. | | Male. | Female. | Male. | Female. | Male. | Female. | | | |
| Boone Co. | W. | 6 | 9 | 11 | 13 | 4 | 5 | 48 | 1 | ... | ... | 1 | 1 | ... | 3 | ... | Dr. Stevenson, Burlington. |
| " | W. | ... | ... | ... | ... | ... | ... | 39 | ... | ... | ... | ... | ... | ... | 7 | 14 | Dr. Newton. |
| " | B. | ... | ... | ... | ... | ... | ... | 7 | ... | ... | ... | ... | ... | ... | 1 | ... | " |
| Covington | W. | 34 | 11 | 36 | 31 | 25 | 28 | 165 | 2 | 2 | ... | ... | ... | 1 | 5 | 10 | Chambers & Evans, |
| " | B. | 1 | ... | ... | 1 | 2 | 2 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | Covington. |
| Fulton Co. | W. | 10 | 2 | ... | 3 | ... | ... | 15 | 1 | ... | ... | ... | ... | ... | 1 | ... | Dr. Alexander, |
| " | B. | 6 | 2 | ... | ... | ... | ... | 8 | 1 | ... | ... | ... | ... | ... | 1 | ... | " |
| " | W. | 7 | 5 | 5 | 2 | 4 | 1 | 24 | ... | ... | ... | ... | 2 | 1 | 3 | 8 | Dr. Cattell, |
| " | B. | 2 | ... | 2 | 1 | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | " |
| " | | ... | ... | ... | ... | ... | ... | 20 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. Sutton, |
| Oldham Co. | W. | 2 | 2 | 3 | ... | 1 | ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. Swain, Ballardsville. |
| " | B. | 3 | 1 | 1 | 2 | ... | ... | 7 | ... | ... | ... | ... | ... | ... | ... | 8½ | |
| Woodford Co. | | ... | ... | ... | ... | ... | ... | 19 | ... | ... | ... | ... | ... | ... | 3* | ... | Dr. Chew, Midway. |
| " | | ... | ... | ... | ... | ... | ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... | " " |
| Madison Co. | W. | 6 | 2 | 3 | 1 | ... | 1 | 13 | ... | ... | ... | ... | ... | ... | 1 | 1 | Dr. Newman, Richmond. |
| " | B. | 4 | 6 | 1 | 1 | ... | ... | 12 | 1 | 2 | ... | ... | ... | ... | 3 | 15 | |
| Boone Co. | | ... | ... | ... | ... | ... | ... | 55 | ... | ... | ... | ... | ... | ... | 2 | ... | The gentleman mentioned by Dr. Stevenson. |
| Meade Co. | W. | 3 | ... | 1 | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. J. V. Withers, |
| " | B. | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | Brandenburg. |
| " | | 15 | 18 | 10 | 8 | 1 | 3 | 55 | ... | 1 | ... | 1 | ... | ... | 2 | ... | Dr. Pusey, county. |
| Bourbon | | ... | ... | ... | ... | ... | ... | 67 | ... | ... | ... | ... | ... | ... | 8† | ... | L. G. Ray & Son, Paris. |
| Knoxville, Tenn. | W. | 2 | ... | 5 | 1 | 4 | 2 | 14 | ... | ... | ... | ... | ... | ... | ... | ... | Dr. F. A. Ramsey, |
| | B. | ... | ... | ... | 1 | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | Knoxville, Tenn. |

Hickman.

*General Remarks.*—Your Committee presume it will not be considered improper in them to make a few general observations upon the treatment of dysentery, the more especially as it is the only disease which has prevailed to any extent within their bounds.

There has been a universal appreciation of the use of opium. The doses have varied, to be sure, yet it has occupied a conspicuous place in the treatment of every gentleman who has favoured the Committee with his opinions. A full opiate, say four or five grs. of

* One of these a consultation case. † Six of these consultation cases.

opium at the very beginning, will sometimes arrest the disease in its forming stage. Many cases of moderate severity may be quickly cured by moderate doses taken occasionally during the day. Not a few have been successfully treated by a pill of ½ to 2 grs. introduced into the rectum after each stool, without any medicine by the mouth.

There is reason to believe that venesection is more neglected in the treatment of this disease than it should be. Such gentlemen as have used it speak satisfactorily of its effects. It is certainly true that generally the pulse is not such as to invite to bloodletting. Nevertheless, there are two reflections which may properly be entertained: 1. We do not always distinguish between what Rush called a depressed pulse, and a weak pulse. 2. A remedy which, *per se*, would be objectionable, may yet be very useful by being associated with others. It would appear that this is the case in dysentery. Bleeding may very reasonably be presumed to prepare the system for the more beneficial influence of opiates.

Emetics also seem to have lost the estimate to which they are justly entitled. Independent of their use in evacuating crudities from the stomach, they have a tendency to make an impression upon the skin, favourable to the solution of the disease.

*General Reflections.*—It has doubtless been observed that mercury is very differently esteemed by different physicians. Whilst many employ it in every case except where there are very strong objections to its use, others almost entirely repudiate its use. It is thought highly desirable that a fair comparison could be instituted between the treatment by mercurials, and that in which they are excluded. Upon mature consideration, however, it is judged that no practical advantage would result from any comparison of the papers furnished to this Committee: 1. Some physicians seem to have reported all cases seen by them, whilst others seem to have reported only those of a certain degree of gravity—that degree not being always very well defined. 2. It will not do to compare the numerical success, in a very grave epidemic, with its effects in a milder one ; much less in an equal number of sporadic cases. This is elucidated by Dr. Ray's experience: whilst he had lost but five patients in five hundred and ten, averaging thirty per annum, he lost two in less than sixty-seven cases occurring in the year 1851. 3. In the reports made to this Committee, some physicians have reported all cases seen by them, without noting how many were their own cases, how many seen in consultation. Others, whilst they make no mention of the whole number seen in consultation,

yet give the number of *fatal* cases seen in consultation. Thus the fatality in the cases of Drs. Ray (eight) seems to be very large; but when we consider that six of those were cases seen in consultation, the result is vastly different. But, as we do not know how many of his sixty-seven cases were his originally (which is considered the proper test of success), we are left in uncertainty. 4. Those who used mercury freely, and those who used it scarcely at all, have equally failed to state the number of cases in which it was given, and the relative number of deaths when given. 5. A good physician will always strive to adapt his remedies to the state of the case before him; hence he may use mercury with more or less freedom, or not at all, and yet his practice may be equally rational.

Mercury, in the form of calomel, blue mass, or mercury with chalk, is given in dysentery for the purpose of producing its specific purgative effect: viz., to eliminate consistent, dark, bottle-green stools. When it produces this effect, it suspends for a time the griping and tenesmus, and also the mucous bloody stools. A dose of this kind, especially if combined with a grain or two of opium, and as much ipecac., given at the commencement of an attack, will many times arrest it. More frequently the dysenteric symptoms recur after being suspended for twelve or twenty-four hours, in which case a similar dose may be repeated. Or smaller doses of mercury, added to the opium and ipecac., may be repeated at intervals of two or four hours, interposing an occasional dose of Epsom salt, or castor-oil, so as to procure one or two fecal stools daily. This use of mercurials seems proper when the malarial influence is very active.

Antagonistic to the mercurial treatment, some adopt the employment of saline cathartics; others adopt these last as a substitute for the former, in such cases as they think unsuited to mercurials. So far as we may judge from the papers furnished to this Committee, there is no very great difference in the success of the two modes of treatment. It is highly probable that the saline purgatives supply a deficiency in the treatment of dysentery, viz., that of depletion, and from the immediate seat of disease.

Blisters are held in high estimation by many, and really act very beneficially in many cases. Yet they are liable to a very serious objection on account of the pain which they occasion on the very frequent rising to the close stool.

Leeches and cupping will answer every purpose, without this objection.

Injections of starch and laudanum are usually very important in allaying irritation of the rectum; yet cases occasionally occur in

which the rectum will not retain even an ounce or two of fluid. In such cases, a suppository of opium will be retained. Care must be taken, however, to place it entirely above the sphincter; else that too will be thrust out.

A strong solution of the nitrate of silver as an injection is becoming very popular, and thus far seems to justify the very high encomiums passed upon it. When given by the mouth, it is also very powerful in removing irritation of the mucous membrane of the bowels.

After a pretty extensive use of the decoction of sweet gum bark in milk, Dr. Chew considers it better than any other article in such cases as are attended by discharges of mixed mucus and blood, which constitute a large majority of all cases.

All which is respectfully submitted.

W. L. SUTTON, M. D.
T. S. BELL, M. D.
W. K. BOWLING, M. D.

CIRCULAR TO THE PHYSICIANS OF TENNESSEE AND KENTUCKY.

GEORGETOWN, KY., *July* 16, 1851.

DEAR SIR:—

The American Medical Association, at its last meeting, made it the duty of the undersigned to report to the next meeting, which is to be held in Richmond, Va., on the 1st day of May, 1852, upon the Epidemics of Tennessee and Kentucky.

We most earnestly solicit the hearty co-operation of our brethren in the two States, in furnishing the materials necessary to make this report. It is surely unnecessary to say one word upon the vast benefit to be conferred upon the community, and upon the profession, by a work of this kind, faithfully executed.

Let no physician say, "There are plenty of physicians to make these returns without my troubling myself about them." No person can describe an epidemic so well as he who has been in its midst: nor can he be certain that the same epidemic does not vary in important features in different localities. It is earnestly hoped that we will receive a return from every county in each State. Even if no epidemic shall have appeared in a county, that fact is important to be known.

It is desired that the returns made to us embrace all epidemics which shall have occurred between the 1st of January and 31st of December, 1851, to be forwarded to one of us *immediately* after the last-mentioned period.

We desire *carefully observed facts*, upon any point connected with epidemics; but would suggest *particular* attention to the following heads:—

Causes supposed to have given rise to the epidemic.

" which favoured its spread.

Causes which retarded its progress.

Prophylactics.

Age, sex, colour, employment, diet, and habits as to exposure and temperance, of those most liable.

The extent of its range.

Prominent symptoms during its different stages.

Proportional mortality.—*Post-mortem appearances.*

Treatment.

Medical topography; including the nature of the soil and geological characters — character and average temperature of the springs and wells.

Meteorological observations—mean, monthly, and annual temperature, weight and moisture, of the atmosphere, &c. &c.

Is it too much to request that you will fill up the annexed table, so far as your own and your medical friends' practice will admit, and return it with your report?

*Committee.* { W. L. SUTTON, M. D., *Chairman, Georgetown, Ky.*
THEO. S. BELL, M. D., *Louisville, Ky.*
W. K. BOWLING, M. D., *Nashville, Tenn.*

| Diseases. | Number attended. | | | | | | | | Number died. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Colour. | Under 15. | | 15 to 35. | | Over 35. | | Total. | Under 15. | | 15 to 35. | | Over 35. | | Total. | Average time of attendance. | |
| | | M. | F. | M. | F. | M. | F. | | M. | F. | M. | F. | M. | F. | | | |
| Cholera | White | | | | | | | | | | | | | | | | |
| | Black | | | | | | | | | | | | | | | | |
| Cholera infantum | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Diarrhœa | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Dysentery | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Erysipelas | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Fever, bilious | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| " typhoid | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| " scarlet | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Hooping-cough | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Influenza | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Measles | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| Smallpox | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |
| | W. | | | | | | | | | | | | | | | | |
| | B. | | | | | | | | | | | | | | | | |

☞ State how many of the above cases were seen secondarily, in consultation or otherwise.